

Data Validation Checklist Inorganic Analyses

Project: 35TH Avenue Superfund Site
 Laboratory: TestAmerica - Savannah, GA
 Method: SW-846 6010C and 7471B, and EPA 200.7 and 245.1
 Matrix: Soil and water
 Reviewer: Jane Lindsey
 Concurrence¹: Carol Lovett/Nicole Lancaster

Project No: 15268508.20000
 Job ID.: 680-88766-3
 Associated Samples: Refer to Attachment A (Sample Summary)
 Date(s) Collected: 03/25/2013, 03/26/2013
 Date: 04/10/2013
 Date: 04/24/2013

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
1. Were sample preservation requirements met? If pH of aqueous sample >2 and was not adjusted by laboratory prior to analysis, J- flag positive results and R- flag non-detect results.	✓				
2. Were all COC records signed and integrity seals intact, indicating that COC was maintained for all samples?	✓				
3. Were there any problems noted in laboratory data package concerning condition of samples upon receipt?		✓			
4. Do any soil/sediment samples contain more than 50% water? If yes, then results are to be reported on a wet-weight basis.		✓			
5. Have any technical holding times, determined from date of collection to date of analysis, been exceeded? (Hg: ≤28 days, other metals: ≤6 months). If not, then J- flag positive results and R- flag non-detect aqueous results.		✓			
6. Were results for all project-specified target analytes reported?	✓				
7. Were project-specified Reporting Limits achieved for undiluted sample analyses?		✓		The MDL (0.59 mg/Kg) for arsenic is greater than the Resident Soil RSL (0.39 mg/Kg). A RSL does not exist for total chromium; however, the total chromium MDL (0.5 mg/Kg) is greater than the hexavalent chromium Resident Soil RSL (0.29 mg/Kg).	
8. Were method blank (MB) prepared at the appropriate frequency (one per 20 samples, batch, matrix, and level)?	✓				
9. Was a calibration blank (ICB/CCB) analyzed at the beginning, after every 10 th sample, and at the end of each analytical run?	✓				
10. Were target analytes detected in the method and/or calibration blanks?		✓		Target analytes were not detected in the method blanks. Calibration blanks were not evaluated.	

¹ Independent technical reviewer

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
11. Were target analytes reported in equipment/rinsate blanks analyses above the DL?		✓		According to the QAPP, a rinsate blank is to be collected after each decontamination event, which occurs once per week per the client. Rinsate blank 032613-RB-Shovel (680-88766-23) was collected during the week of 03/25/2013. The rinsate blank was analyzed for metals by EPA Methods 200.7 and 245.1 under this Test America Job ID.	
12. Were contaminants detected in samples below the blank contamination action level? <ul style="list-style-type: none"> ○ If blank result > RL, <ul style="list-style-type: none"> • Flag sample results \leq RL with a U • Flag positive sample results > RL and $\leq 10\times$ blank result, as J+ positive results ○ If blank result \leq RL, <ul style="list-style-type: none"> • Flag sample results \leq RL with a U • Flag positive sample results > RL and $\leq 10\times$ blank result, as J+ positive results 			✓	Method and rinsate blank contamination does not exist.	
13. Are there negative laboratory blank results with the absolute value \leq RL? If yes, then flag positive and non-detect sample results that are < 10x absolute blank value as J- and UJ, respectively.		✓			
14. Was a field duplicate analyzed?	✓			CV0613K-CSD (680-88766-13) is a field duplicate of CV0613K-CS (680-88766-12).	
15. Was precision deemed acceptable as defined by the project plans?		✓		Refer to Attachment B (Field Duplicate Evaluation)	J
16. Were initial and continuing calibration standards analyzed at the lab/project-specified frequency for each instrument? <ul style="list-style-type: none"> ○ 6010C: <ul style="list-style-type: none"> • ICAL: Blank and one standard • ICV initially, and CCV every 10th sample and at the end of the analytical run • Lower Limit of Quantitation Check Sample (CRI) to be analyzed after establishing lower laboratory reporting limits and as needed ○ 7471B: <ul style="list-style-type: none"> • ICAL: Blank and five standards • ICV initially, and CCV every 10th sample and at the end of the analytical run 	✓			<ul style="list-style-type: none"> • 200.7: 03/30/2013, instrument ICPE. One blank and one standard initially. ICV initially, and CCV every 10 samples and at end of run. CRI after initial calibration blank analysis. • 245.1: 04/02/2013. 6-Point ICAL. ICV initially, CCV every 10 samples and at end of run. CRI after initial calibration blank analysis. • 6010C: 04/02/2013, instrument ICPF. One blank and one standard initially. ICV initially, and CCV every 10 samples and at end of run. CRI after initial calibration blank analysis. • 7471B: 03/29/2013. 6-Point ICAL. ICV initially, CCV every 10 samples and at end of run. CRI after initial calibration blank analysis. 	

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
17. Were these results within lab/project specifications? <ul style="list-style-type: none"> ○ 6010C <ul style="list-style-type: none"> • ICV/CCV (Criteria: 90-110%R): <ul style="list-style-type: none"> ▪ If %R <75, then J- flag positive results and R-flag non-detects ▪ If 75-89%R, then J- flag positive results and UJ flag non-detects ▪ If 111-125%R, then J flag positive results ▪ If >125%R, then J+ flag positive results ▪ If >160%R, then R flag positive results • CRI (Method: 70-130%R, Laboratory: 50-150%R; Project: 50-150%R for Sb, Pb, and Tl, and 70-130%R for all other analytes): <ul style="list-style-type: none"> ▪ If CRI %R <50 (<30% for Sb, Pb, Tl), then R flag results $\leq 2x$ RL and J flag positive results $>2x$ RL ▪ If CRI %R 50-69% (30-49% for Sb, Pb, Tl), then J- and UJ flag positive results $<2x$ RL and ND, respectively ▪ If CRI %R >130% and $\leq 180\%$ (>150%, but $\leq 200\%$ for Sb, Pb, Tl), then J+ flag positive results $<2x$ RL ▪ If CRI %R >180% (>200% for Sb, Pb, Tl), then R flag positive results ○ 7471B <ul style="list-style-type: none"> • ICV/CCV (Criteria: 80-120%R): <ul style="list-style-type: none"> ▪ If correlation coefficients <0.995, then J and UJ flag positive and non-detect results. ▪ If %R <65, then J- flag positive results and R-flag non-detects ▪ If 65-79%R, then J- flag positive results and UJ flag non-detects ▪ If 121-135%R, then J flag positive results ▪ If >135%R, then J+ flag positive results ▪ If >170%R, then R flag positive results • CRI (Method: Not required, Laboratory: 50-150%R, Project: 70-130%R): <ul style="list-style-type: none"> ▪ If CRI %R <50, then R flag results $\leq 2x$ RL and J flag positive results $>2x$ RL ▪ If CRI %R 50-69%, then J- and UJ flag positive results $<2x$ RL and ND, respectively ▪ If CRI %R >130% and $\leq 180\%$, then J+ flag positive results $<2x$ RL ▪ If CRI %R >180%, then R flag positive result 	✓			Mercury correlation coefficient : <ul style="list-style-type: none"> • 245.1: ICAL of 04/02/2013 is 0.9999415 (page 445) • 7471B : ICAL of 03/29/2013 is 0.9999795 (page 449) 	
18. Was the interference check sample (ICS) analyzed at the beginning of each ICP analytical run?	✓				

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
19. Are ICS recoveries within 80-120% of the true value? If not, qualify data as follows when native Al, Fe, Ca, and Mg sample concentrations are equal to or greater than the ICS spiking level: <ul style="list-style-type: none"> ○ If >120%R (or >true value plus 2x CRQL), J+ flag positive results ○ If 50-79%R (or less than true value – 2x the CRQL), J- flag positive results and UJ flag non-detects ○ If <50%R, J- flag positive results and R-flag non-detects 	✓				
20. Was a LCS analyzed for each preparation batch (one per 20 samples per matrix and level)?	✓				
21. Did LCS recoveries meet method/laboratory/project (80-120%R) specifications? <ul style="list-style-type: none"> ○ Soil: <ul style="list-style-type: none"> • LCS result > Upper control limit (UCL): J+ flag positive results • LCS result < Lower control limit (LCL): J- flag positive results and UJ flag non-detects ○ Aqueous: <ul style="list-style-type: none"> • If <50%R, then J- and R flag positive and ND results, respectively • If 50-LCL%R, J- and UJ flag positive and ND results, respectively • >UCL: J+ Flag positive results • >150%R: R Flag results 	✓				
22. Was the RPD between LCS and LCSD results within method/laboratory /project control limits ($\leq 20\%$ RPD)? If not, J and UJ flag positive and non-detect results, respectively			✓	LCS only	
23. Was a Matrix Spike (MS) and Matrix Spike Duplicate (MSD) analyzed once per preparation batch?	✓				
24. Is the MS and MSD parent sample a project-specific sample?	✓			<ul style="list-style-type: none"> • 200.7, Prep Batch 271187: 680-88739-1 (Batch sample), MS/MSD • 245.1, Prep Batch 271376: 680-88851-1 (Batch sample), MS/MSD • 6010C, Prep Batch 271166: 680-88766-6 (CV0613E-CS), MS/MSD • 7471B, Prep Batch 271188: 680-88766-6 (CV0613E-CS), MS/MSD 	

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
25. Was a post-digestion spike (PDS) analysis conducted when MS and/or MSD results did not meet control limits (Note: PDS is not required for silver)?		✓		<ul style="list-style-type: none"> 200.7: 680-88739-1 (Batch sample) 6010C: 680-88766-6 (CV0613E-CS) 	
26. For all analytes with sample concentration < 4 x spike concentration, are spike recoveries within method (6010C: 75-125%R MS/MSD and 80-120%R PDS; 7471B: 80-120%R MS/MSD and PDS not required), laboratory (MS, MSD, and PDS: 75-125%R), and project (as noted below) specifications? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> If not, <ul style="list-style-type: none"> 6010C: <ul style="list-style-type: none"> If MS %R <30 and PDS %R <75, then J- and R Flag positive and ND results, respectively If MS %R <30 and PDS %R >75, then J flag positive and UJ flag non-detect results If MS and MSD %R 30-74 and PDS%R <75, then J- flag positive and UJ flag non-detect results If MS and MSD %R 30-74 and PDS%R ≥75, then J flag positive and UJ flag non-detect results If MS, MSD, and PDS %R >125, J+ flag positive results If MS and MSD %R >125 and PDS %R ≤125, then J flag positive results If MS and MSD %R <30 and no PDS, then J- flag positive and R-flag non-detect results If MS and MSD %R 30-74 and no PDS, then J- and UJ flag positive and non-detect results, respectively If MS and MSD %R >125 and no PDS, then J+ flag positive results 7471B: <ul style="list-style-type: none"> If MS %R <30, then J- and R Flag positive and ND results, respectively If MS and MSD %R 30-74, then J- flag positive and UJ flag non-detect results If MS and MSD %R >125, then J+ flag positive results 		✓		CV0613E-CS (680-88766-6): <ul style="list-style-type: none"> Arsenic @ 6 and 33%R (75-125). PDS recovery (100%) fell within control limits (75-125). J Flag Barium @ 203 and 226%R (75-125). An evaluation of interference is not possible based on MS and MSD results². PDS recovery (100%) fell within control limits (75-125). Chromium 39 and 138%R (75-125). An evaluation of interference is not possible based on MS and MSD results². PDS recovery (96%) fell within control limits (75-125). Lead @ 229 and 607%R (75-125). An evaluation of interference is not possible based on MS and MSD results². PDS recovery (91%) fell within control limits (75-125). Mercury @ 101 and 121%R (80-120). Qualification of the data is not necessary³. 	J

² The native sample concentration is greater than 4x the MS/MSD spiking level.

³ The recovery of either the MS or MSD fell within control limits.

Data Validation Checklist (Continued)

Review Questions	Yes	No	N/A	Samples (Analytes) Affected/Comments	Flag
27. Were laboratory/project ($\leq 20\%$ RPD) criteria met for precision during the MS and MSD analysis? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> If RPD $> 20\%$, J and UJ flag positive and non-detect results. 	✓				
28. Was a serial dilution conducted for 6010C?	✓				
29. Is the serial dilution parent sample a project-specific sample?	✓			6010C: 680-88766-6 (CV0613E-CS)	
30. Is the percent difference between the serially diluted result and undiluted result less 10% (for those analytes with native concentrations greater than 50x the DL)? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> If %D > 10, J and UJ flag positive and non-detect results, respectively. 		✓		<ul style="list-style-type: none"> Barium @ 11%D (≤ 10) Chromium @ 11%D (≤ 10) <p>J Flag positive results in sample CV0613E-CS.</p>	J
31. Was a laboratory duplicate analyzed?		✓			
32. Was the lab duplicate analysis conducted on a project-specific sample?			✓		
33. Were criteria for laboratory/project precision met? <i>Only QC results for project samples that are reported under this Job ID are evaluated.</i> <ul style="list-style-type: none"> If RPD values $> 20\%$ (35% for soil/sediment) or absolute difference $> RL$ (2x RL for soil/sediment), then J and UJ flag positive and non-detect results, respectively 			✓		
34. Were lab comments included in report? If yes, summarize contents or attach a copy of the narrative.	✓			Refer to Attachment C (Case Narrative)	
Comments: The data validation was conducted in accordance with the <i>Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1</i> (OTIE, October 2012). The data review process was modeled after the <i>USEPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Inorganic Data Review</i> (EPA 540-R-04-004, October 2004). Sample results have been qualified based on the results of the data review process (Attachment D). Criteria for acceptability of data were based upon available site information, analytical method requirements, guidance documents, and professional judgment					

DV Flag Definitions:

- J- The result is an estimated quantity, but the result may be biased low.
- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
- U The analyte was analyzed for, but was not detected above the associated level; blank contamination may exist.
- UJ The analyte was analyzed for, but was not detected. The reported limit is approximate and may be inaccurate or imprecise.

ATTACHMENT A
SAMPLE SUMMARY

SAMPLE SUMMARY

Client: Oneida Total Integrated Enterprises LLC

Job Number: 680-88766-3

Sdg Number: 68088766-3

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-88766-6	CV0613E-CS	Solid	03/25/2013 1343	03/28/2013 0937
680-88766-6MS	CV0613E-CS	Solid	03/25/2013 1343	03/28/2013 0937
680-88766-6MSD	CV0613E-CS	Solid	03/25/2013 1343	03/28/2013 0937
680-88766-12	CV0613K-CS	Solid	03/25/2013 1426	03/28/2013 0937
680-88766-13	CV0613K-CSD	Solid	03/25/2013 1428	03/28/2013 0937
680-88766-22	CV0613E-CS (sieve)	Solid	03/25/2013 1343	03/28/2013 0937
680-88766-23	032613-RB-shovel	Water	03/26/2013 1300	03/28/2013 0937

ATTACHMENT B
FIELD DUPLICATE EVALUATION

Evaluation of Field Duplicate Results

Attachment B

Analyte	CV0613K-CS (680-88766-12)	RL	CV0613K-CSD (680-88766-13)	RL	Unit	Avg. RLx5	RPD	Absolute difference	2x Avg RL	Action
Arsenic	7.2	2.2	12	2.0	mg/kg	10.5	NA	4.8	4.2	J/UJ-flag, absolute difference > 2x Avg RL
Barium	100	1.1	290	0.99	mg/kg	5.225	97	NA	NA	J/UJ-flag, RPD > 50%
Cadmium	0.53	0.56	0.41	0.49	mg/kg	2.625	NA	0.12	1.05	None, absolute difference ≤ 2x Avg RL
Chromium	62	1.1	72	0.99	mg/kg	5.225	15	NA	NA	None, RPD ≤ 50%
Lead	92	1.1	100	0.99	mg/kg	5.225	8	NA	NA	None, RPD ≤ 50%
Selenium	1.7	2.8	1.0	2.5	mg/kg	13.25	NA	0.7	5.3	None, absolute difference ≤ 2x Avg RL
Mercury	0.12	0.023	0.11	0.019	mg/kg	0.105	9	NA	NA	None, RPD ≤ 50%

Note: If the analyte was not detected, then the cell was left blank.

mg/kg -milligrams per kilogram

J - Estimated value

NA - Not applicable

RL - Reporting limit

RPD - Relative percent difference

UJ - Not detected and the limit is estimated

Precision is based on either the absolute difference between sample results or RPD. If the sample results are less than or equal to 5x's the RL, then precision is based on the absolute difference between duplicate results. If sample results >5x's RL, then precision is evaluated using RPD. J-Flag sample results whenever the absolute difference is greater than the RL (2x for soils) or the RPD >20% (50% for soil). Table above presents the results for detected analytes only.

ATTACHMENT C

CASE NARRATIVE

CASE NARRATIVE

Client: Oneida Total Integrated Enterprises LLC

Project: 35th Avenue Superfund Site

Report Number: 680-88766-3

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 03/28/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.4 C.

METALS (ICP) WATER

Sample 032613-RB-shovel (680-88766-23) was analyzed for Metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 03/29/2013 and analyzed on 03/30/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY WATER

Sample 032613-RB-shovel (680-88766-23) was analyzed for total mercury in accordance with EPA Method 245.1. The samples were prepared on 04/01/2013 and analyzed on 04/02/2013.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP) SOILS

Samples CV0613E-CS (680-88766-6), CV0613K-CS (680-88766-12), CV0613K-CSD (680-88766-13) and CV0613E-CS (sieve) (680-88766-22) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 03/29/2013 and analyzed on 04/02/2013.

Several analytes recovered outside the recovery criteria for the MS/MSD of sample CV0613E-CS (680-88766-6) in batch 680-271678.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

TOTAL MERCURY SOILS

Samples CV0613E-CS (680-88766-6), CV0613K-CS (680-88766-12), CV0613K-CSD (680-88766-13) and CV0613E-CS (sieve) (680-88766-22) were analyzed for total mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 03/29/2013.

Mercury recovered outside the recovery criteria for the MSD of sample CV0613E-CS (680-88766-6) in batch 680-271298.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

No other difficulties were encountered during the mercury analyses.

All other quality control parameters were within the acceptance limits.

ATTACHMENT D
QUALIFIED SAMPLE RESULTS

Client Sample Results

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-88766-3
SDG: 68088766-3

Client Sample ID: CV0613E-CS

Date Collected: 03/25/13 13:43

Date Received: 03/28/13 09:37

Lab Sample ID: 680-88766-6

Matrix: Solid

Percent Solids: 84.8

Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13	J	2.3	0.68	mg/Kg	☆	03/29/13 10:06	04/02/13 21:07	1
Barium	82	J	1.2	0.35	mg/Kg	☆	03/29/13 10:06	04/02/13 21:07	1
Cadmium	0.59		0.58	0.12	mg/Kg	☆	03/29/13 10:06	04/02/13 21:07	1
Chromium	47	J	1.2	0.58	mg/Kg	☆	03/29/13 10:06	04/02/13 21:07	1
Lead	84		1.2	0.61	mg/Kg	☆	03/29/13 10:06	04/02/13 21:07	1
Selenium	2.9	U	2.9	1.2	mg/Kg	☆	03/29/13 10:06	04/02/13 21:07	1
Silver	1.2	U	1.2	0.11	mg/Kg	☆	03/29/13 10:06	04/02/13 21:07	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.14		0.021	0.0085	mg/Kg	☆	03/29/13 10:50	03/29/13 17:34	1

Client Sample ID: CV0613K-CS

Date Collected: 03/25/13 14:26

Date Received: 03/28/13 09:37

Lab Sample ID: 680-88766-12

Matrix: Solid

Percent Solids: 84.7

Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.2	J	2.2	0.66	mg/Kg	☆	03/29/13 10:06	04/02/13 21:46	1
Barium	100	J	1.1	0.34	mg/Kg	☆	03/29/13 10:06	04/02/13 21:46	1
Cadmium	0.53	J	0.56	0.11	mg/Kg	☆	03/29/13 10:06	04/02/13 21:46	1
Chromium	62		1.1	0.56	mg/Kg	☆	03/29/13 10:06	04/02/13 21:46	1
Lead	92		1.1	0.60	mg/Kg	☆	03/29/13 10:06	04/02/13 21:46	1
Selenium	1.7	J	2.8	1.1	mg/Kg	☆	03/29/13 10:06	04/02/13 21:46	1
Silver	1.1	U	1.1	0.11	mg/Kg	☆	03/29/13 10:06	04/02/13 21:46	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12		0.023	0.0093	mg/Kg	☆	03/29/13 10:50	03/29/13 17:46	1

Client Sample ID: CV0613K-CSD

Date Collected: 03/25/13 14:28

Date Received: 03/28/13 09:37

Lab Sample ID: 680-88766-13

Matrix: Solid

Percent Solids: 87.2

Method: 6010C - Metals (ICP)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12	J	2.0	0.58	mg/Kg	☆	03/29/13 10:06	04/02/13 21:51	1
Barium	290	J	0.99	0.30	mg/Kg	☆	03/29/13 10:06	04/02/13 21:51	1
Cadmium	0.41	J	0.49	0.099	mg/Kg	☆	03/29/13 10:06	04/02/13 21:51	1
Chromium	72		0.99	0.49	mg/Kg	☆	03/29/13 10:06	04/02/13 21:51	1
Lead	100		0.99	0.52	mg/Kg	☆	03/29/13 10:06	04/02/13 21:51	1
Selenium	1.0	J	2.5	0.99	mg/Kg	☆	03/29/13 10:06	04/02/13 21:51	1
Silver	0.99	U	0.99	0.095	mg/Kg	☆	03/29/13 10:06	04/02/13 21:51	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.11		0.019	0.0080	mg/Kg	☆	03/29/13 10:50	03/29/13 17:49	1

TestAmerica Savannah

Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)

Client Sample Results

Client: Oneida Total Integrated Enterprises LLC
Project/Site: 35th Avenue Superfund Site

TestAmerica Job ID: 680-88766-3
SDG: 68088766-3

Client Sample ID: CV0613E-CS (sieve)

Lab Sample ID: 680-88766-22

Date Collected: 03/25/13 13:43

Matrix: Solid

Date Received: 03/28/13 09:37

Percent Solids: 85.1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.7		2.2	0.65	mg/Kg	☆	03/29/13 10:06	04/02/13 21:56	1
Barium	130		1.1	0.33	mg/Kg	☆	03/29/13 10:06	04/02/13 21:56	1
Cadmium	0.81		0.55	0.11	mg/Kg	☆	03/29/13 10:06	04/02/13 21:56	1
Chromium	80		1.1	0.55	mg/Kg	☆	03/29/13 10:06	04/02/13 21:56	1
Lead	150		1.1	0.58	mg/Kg	☆	03/29/13 10:06	04/02/13 21:56	1
Selenium	2.7	U	2.7	1.1	mg/Kg	☆	03/29/13 10:06	04/02/13 21:56	1
Silver	0.11	J	1.1	0.11	mg/Kg	☆	03/29/13 10:06	04/02/13 21:56	1

Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.17		0.021	0.0085	mg/Kg	☆	03/29/13 10:50	03/29/13 17:51	1

Client Sample ID: 032613-RB-shovel

Lab Sample ID: 680-88766-23

Date Collected: 03/26/13 13:00

Matrix: Water

Date Received: 03/28/13 09:37

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	20	U	20	4.6	ug/L		03/29/13 10:49	03/30/13 11:08	1
Barium	10	U	10	2.3	ug/L		03/29/13 10:49	03/30/13 11:08	1
Cadmium	5.0	U	5.0	2.0	ug/L		03/29/13 10:49	03/30/13 11:08	1
Chromium	10	U	10	1.2	ug/L		03/29/13 10:49	03/30/13 11:08	1
Lead	10	U	10	4.0	ug/L		03/29/13 10:49	03/30/13 11:08	1
Selenium	20	U	20	6.4	ug/L		03/29/13 10:49	03/30/13 11:08	1
Silver	10	U	10	0.89	ug/L		03/29/13 10:49	03/30/13 11:08	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.091	ug/L		04/01/13 10:19	04/02/13 13:45	1

TestAmerica Savannah

Sample results have been qualified by URS in accordance with the Non-Industrial Use Property Sampling Event QAPP for the 35th Avenue Removal Site, Birmingham, Alabama, Revision 1 (OTIE, October 2012)